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EDITORIAL

IN the death of Dr. George M. Dawson, director of the geological survey of Canada, American geology has lost one of its ablest representatives. Not only as an individual worker, but as an administrator, he displayed unusual capacity and gave promise of still larger achievements in the future. That so promising a career should be cut short so suddenly at the climax of its productiveness is sad indeed, and the loss is keenly felt by the scientific world. When the vastness of the area whose investigation was being conducted under his direction, and its important relations to many of the great outstanding problems of geology, are recalled, the misfortune of the interruption of his successful administration and of his personal labors is most fully realized.

Dr. Dawson enjoyed unusual privileges of education and early association, which, combined with his native capacity for absorption and assimilation, gave him an unusual breadth of learning and catholicity of interest, and these qualities were called into active and manifold expression in the exposition of the broad and complex phenomena of the great Canadian field. He was gifted with notable literary abilities, and these, combined with a charming personality, gave grace and geniality to all his presentations. We hope to present a critical sketch of his work in a future number. T. C. C.

IT is a hopeful sign for the future terminology of our science that manifestations of dissatisfaction with its current nomenclature are just now taking on active and declared forms. During the last few weeks conferences have been held in different quarters at which the improvement of existing usage has been the special subject of discussion. It is not proposed to dwell upon these here, though it is hoped that the JOURNAL may have something further to say upon the subject at an early date, but merely to say a word on the special issue raised by the articles of Messrs. Cumings and Siebenthal in this number, which appear together by mutual concurrence. These articles bring up the question how far the law of priority, rigorously interpreted, shall determine all subsequent usage, and how far other considerations may properly weigh against it. It appears that in this case the term "Bedford" was used by Owen as early as 1862 in describing the well-known Indiana formation; but that it was not then formally proposed as the scientific name of the formation. In 1870 Dr. Newberry proposed the name "Bedford shale" for an entirely different formation, found at Bedford, *Ohio*. Since then the term "Bedford stone" has become familiar throughout the country as the commercial designation of the rock so extensively shipped from the Indiana town, and this use will quite certainly continue in spite of any technical usage which geologists may propose. Two practical questions therefore arise:

1. Does the familiar use of a term in an official report as the designation of a given formation in any sense or to any degree preoccupy the term so that it may not be used advisedly as the formal name of any other formation, particularly a formation in the same geological province? Specifically, did the use of the term "Bedford rock" by Owen in any degree preoccupy the term "Bedford" so that it was improperly selected as the formal name of a formation in Ohio?

2. Does the growth of such a name into very common usage, together with the certainty that this common usage must prevail in spite of any technical practice that may be adopted by geologists, constitute a sufficient reason for not applying the term technically to any other formation in the same province?

There is also the more general question, whether our science should be burdened for all time to come by infelicities in the choice of a name made by a busy worker who may have been able to give but a passing thought to the selection of a name, and who may have been unaware at the time of the infelicities likely to arise out of it. In short, shall the rule of priority, rigidly and technically interpreted, be observed for all time, however infelicitous it may prove to be?

These are questions upon which at present there are differences of opinion. It seems altogether wise to keep them in a state of agitation until geological opinion shall formulate itself on mature and permanent grounds. We are passing from the initial stages of our science, in which the discovery of formations, like the discovery of animal and plant species, has predominated, into a more mature stage, in which these elements will lose their importance through the recognition of gradations, of evolutions, and of those broader and profounder relationships which will constitute the really important phases of the subject to future students. It is fitting, therefore, that we should consider whether the verbal lumber that may have had importance in the initial stages shall be transmitted, without modification or adaptive evolution, to the whole future of the science. To the writer it seems important to the future of the science that its language should be developed along the lines of greatest serviceability and esthetic merit. It seems, furthermore, quite possible to give all due honor to the initial discoverer without injury to the language of the science; indeed, it would seem in some instances that the initial discoverer would be honored by the rejection or the modification of his unfortunate nomenclature. Is it not within the limits of permissible practice to set aside an unfortunate name and to substitute a new one, and at the same time leave the credit of primal identification to the original author? It does not seem that priority of discovery and of description is inseparably connected with priority of nomenclature.

It is not the purpose of this note, nor the policy of the JOURNAL, to urge at once a decision in this special case or in similar cases, but rather to urge that the question of nomenclature be kept open and be the subject of thoughtful study until all of the considerations that should enter into the formation of the language of the science have been brought forth into distinct recognition and have been duly pondered. After sufficient time has been allowed for a deliberate consideration on these broader lines, and a consensus of opinion has been matured as a result, general rules may perhaps be reached. Meantime a measure of freedom may be allowed to individual judgment.

T. C. C.

THE writer has read the proof of the article "On the use of the term Bedford limestone," by Mr. C. E. Siebenthal, which appears in this number of the *Journal of Geology*. Mr. Siebenthal's argument in reference to "the prior claims of Indiana to Bedford as a formation name" rests entirely upon the occurrence of the term "Bedford rock" in Owen's report on Lawrence county, published in 1862, which we have shown was *not* used in the sense of a formation name and was not described. The sentence in which "Bedford rock" occurs is as follows: "The Bedford rock has long been celebrated for its excellent qualities as a building stone, and is extensively shipped; additional localities are being opened, and only require the liberality of railroad directors to furnish switches and other facilities for still more extended sales."[1] The name was used in the same sense as the names of hundreds of other towns have been applied to the rock quarried in their vicinity but without any intention to have them serve as the names of geologic units. If they were recognized as formation names the number of synonyms for the consideration of the stratigraphical geologist would be enormously increased.

Bedford shale was published as the name of a geological division by Dr. Newberry in 1870[2] and fully described by him in 1873.[3] Following the single occurrence of "Bedford rock" in Owen's report the next citation of "Bedford stone" by Mr. Siebenthal is from the Indiana report for 1873, published in 1874,[4] in which Professor John Collett described the "Geology of Lawrence county" and under the geological division of the St. Louis limestone, which was composed of beds No. 24–17 inclusive, he stated that "bed No. 22, is the quarry bed which furnishes in unlimited supply the famous 'Bedford stone' so favorably known. . . . . This stone is composed almost wholly of minute fossils cemented with shell and coal dust. It varies in color from gray to a creamy white, and may be quarried in blocks or columns the entire thickness (12 feet) of the stratum."[1] Under the geological section of the county bed No. 22 is described as "White quarry limestone" from 4 to 12 feet in thickness.[2] It is evident on reading the report that Professor Collett did not use the term "Bedford stone" as the name of a geologic unit. Furthermore, this report and the following citations by Mr. Siebenthal have no bearing upon the question of the priority of Bedford as a formation name because they are all antedated by Dr. Newberry's precise delimination and description of the Bedford Shales of northern Ohio.

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[1] Rept. Geol. Reconnoissance Indiana, 1862, p. 137.

[2] Rept. Geol. Surv. Ohio, Pt. I, Rept. Progress in, 1869, p. 21.

[3] Rept. Geol. Surv. Ohio, Vol. I, Pt. I, pp. 188, 189.

[4] Fifth Ann. Rept. Geol. Surv. Indiana made during the year 1873–4, p. 276.

Mr. Siebenthal's second point that "to the trade, *Bedford stone* it will be to the end of the chapter" does not appear to the writer to have any particular bearing upon the question. He does not believe when a scientific classification and one used in trade fail to agree that it is necessary for the former to withdraw in favor of the commercial one. A still more striking example of the difference between the trade and geological name is that of the "North or Hudson River bluestone," the trade name used for the sandstone so largely employed for flagging and house trimmings in New York and other eastern cities. The trade name was in use before the rocks of eastern New York were classified; but the geologists did not use it for the name of a geological division, although the name Hudson River group was used for an older formation than the one in which the quarries were located. The belt of country containing this "bluestone" extends for nearly one hundred miles north and south on the western side of the Hudson River and the early quarries were in rocks of the Hamilton formation. As these were partially exhausted new quarries were opened to the westward in rocks of the Sherburne formation, and later farther west in the Catskill Mountain region in rocks of the Catskill formation. At the present time the greater part of the "bluestone" is obtained from the Sherburne and Catskill formations; but to the trade it is all generally known and sold as the "Hudson River bluestone."

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[1] Fifth Ann. Rept. Geol. Surv. Indiana made during the year 1873–4, p. 276.

[2] Loc. cit., p. 265.

The name Bedford shale was given by Dr. Newberry to the geologic unit which is well exposed at Bedford village, southeast of Cleveland. The formation varies in thickness from fifty to one hundred feet; is sharply defined lithologically with its base resting on top of the black Ohio shale while its top is marked by the base of the Berea grit. In distribution it extends from eastern Ohio across the northern part of the state to Huron county, and thence south across the state to the Ohio River and into Kentucky. At a few localities in northern Ohio, especially near Cleveland, the shale includes from fifteen to twenty feet of valuable sandstone which is used considerably in that city for flagging and building stone. The Bedford shale of Ohio is as thick a formation as the Bedford limestone of Indiana; lithologically it is more sharply limited; it has, apparently, as great areal distribution; as the name of a definite geologic division it has appeared in geological literature for a longer time and to a much greater extent; but it does not contain as valuable economic deposits of building stone.

CHARLES S. PROSSER.

May 2, 1901.